

IN THE SPECIFICATION:

At Page 7, please delete the paragraph beginning at line 3 and replace with the following paragraph:

$$\text{error} \leq \frac{1}{2a_i^2} \times \left(\frac{1}{2N}\right)^2; i = 0, \dots, N-1; 1 \leq a_i < 2 \quad (7a)$$

At Page 7, please delete the paragraph beginning at line 14 and replace with the following paragraph:

$$b_i = -\log(a_i) + \left(\frac{1}{4a_i N}\right)^2 - \left(1 + \frac{1}{2N}\right) \frac{1}{a_i}; \text{ and} \quad (9)$$

$$c_i = -1/a_i.$$

IN THE CLAIMS

1. (once amended) A method for computing an approximation of a natural logarithm function comprising the steps of:

partitioning a mantissa region between 1 and 2 into  $N$  equally spaced sub-regions;

precomputing centerpoints  $a_i$  of each of the  $N$  equally spaced sub-regions, where  $i = 0, \dots, N-1$ ;

selecting  $N$  sufficiently large so that, for each sub-region, a first degree polynomial in  $m$  computes  $\log(m)$  to within a preselected degree of accuracy for any  $m$  within the sub-region, where  $m$  is a mantissa of a binary floating point representation of a number; and